

## Economic and Business Forecasting

### Required Text

Francis X. Diebold "Elements of Forecasting. Second Edition". South-Western College Publishing 2001.

### Topics and Readings

This is a course on forecasting methods and their applications in economics, business and finance. Students will be introduced to regression methods from time series analysis illustrated using a variety of real data sets. At the end of the course students should be able to go through the cycle of proposing a model, carrying out diagnostic tests, revising the model and setting up out-of-sample forecasting experiments.

#### I. Basic Concepts and Tools in Forecasting

1. Forecasting situations. Diebold, ch. 1.
2. Forecasting concepts. Diebold, ch. 2.
3. Forecasting with linear regression models. Diebold ch. 1 (pages 15-31), ch. 10 (pages 241-246)
4. Model selection. Diebold, ch. 4.4 (pages 83-89).
5. Graphic tools (read on your own). Diebold, ch. 3.

#### II. Trend, Seasonality and Cycles

1. Modeling and forecasting trend. Diebold ch. 4 (pages 72-83, 89-102).
2. Modeling and forecasting seasonality. Diebold ch 5.
3. Characterizing cycles. Diebold ch. 6.
4. ARMA models. Diebold ch. 7.
5. Forecasting cycles. Diebold ch. 8.
7. Forecasting model with trend, seasonality and cycle. Diebold ch. 9.

#### III. Further Topics

1. Unit roots and stochastic trends. Random walk model. Diebold ch. 12.
2. Forecast Evaluation and Forecast combination. Diebold, ch. 11.
3. Forecasting with Multivariate Models. Diebold, ch. 10 (pages 246-276).

### Course Resources

Announcements regarding the course will be made on the course web page, details of which will be announced in class. You can also find course assignments, data and a copy of the course syllabus on this homepage.

### Regular Office Hours

These will be announced during the first week of classes.

### Grading

Course requirements and grading weights are as follows:

- Problem sets: 20%
- Midterm Exams: 15% each (scheduled for Tuesday, January 30 and Thursday, February 22)
- Project: 10%
- Final Exam: 40%